NorthWestern Energy

DOCKET NO. N2006.12.184

Natural Gas Biennial Procurement Plan

December 2006

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INTRODUCTION

NorthWestern Energy (NWE) is submitting its December 2006 Natural Gas Biennial Procurement Plan (Plan) to the Montana Public Service Commission (MPSC or Commission) pursuant to the Commission's Interim Order, Docket No. N2005.6.101, Order No. 6683b.

NWE believes documented acquisition strategies assist in meeting the needs of Default Supply ratepayers and in recovery of all NWE's costs associated with the natural gas Default Supply function. This Plan documents NWE's procurement strategies for meeting the Default Supply needs for the next two years (2007-2009 tracking periods).

NWE filed an Abbreviated Plan with the Commission on March 15, 2006. The Abbreviated Plan discussed the procurement strategy NWE would follow during the 2006/2007 tracking period. A public hearing on the Abbreviated Plan was held by the MPSC on May 4, 2006 and the MPSC issued formal comments on June 23, 2006.

This Plan, consistent with the Abbreviated Plan, follows the Interim Tariff Guidelines (Guidelines) as approved by the Commission as Natural Gas Tariff Preliminary Statement Part D for service rendered on or after February 1, 2006. While these Guidelines do not mandate specific methods or processes for NWE to follow, they do provide a framework for both planning and acquiring natural gas to meet Default Supply needs. As such, NWE has carefully considered the Guidelines while developing this Plan.

In addition to the Guidelines, NWE's Abbreviated Plan (which guided NWE's gas procurement strategy for the 2006/2007 heating season) provided the foundation for this Plan. NWE also received direction from the MPSC's comments on its

Abbreviated Plan and has incorporated these comments into the formulaton of this Plan.

NWE understands that the MPSC will review this Plan, including the proposed acquisition strategies and provide comments if it has concerns. It is important to note that situations or events may occur that will cause NWE to deviate from the strategy described here. If so, those circumstances and associated actions will be documented for later review.

<u>Commission Comments on Abbreviated Plan</u>

NWE'S Abbreviated Procurement Plan included a menu of acquisition mechanisms designed to ensure ratepayer reliability, increase rate stability and provide reasonable rates. The MPSC provided comments on the Abbreviated Plan including discussions on: Layering-In Fixed-Price Purchases; Hard Targets; Storage Levels and Utilization; the Use of Financial Hedging; Storage Monetization; Parties' Expectations and Other Issues which included a Request For Proposal (RFP) discussion, a Demand Side Management (DSM) Assessment and disbanding the Gas Technical Advisory Committee (GTAC). The response to each of these comments is included in the respective portions of this Plan.

<u>Review of Abbreviated Plan</u>

NWE closely followed the Abbreviated Plan's acquisition strategy with two exceptions:

1.) Deferred Storage

2.) Long-Term Fixed Price Purchases

The reasoning for both of these exceptions will be discussed in detail below in the applicable portions of this Plan. It is worth noting that the MPSC, in their comments on the Abbreviated Plan, recognize that in the event of new knowledge or changing market conditions (for example), NWE should use its judgement and not just blindly follow its Plan.

Comparison of Abbreviated Plan To This Plan

In response to market conditions and counterparty feedback NWE has, to some extent, modified this Plan from the Abbreviated Plan that was filed in March 2006. The following areas have changed:

1.) Deferred Storage Quantities are slightly reduced;

2.) Long-Term Fixed Price Purchases have been decreased; and

3.) Hard Targets have been modified.

The reasoning and details concerning these changes will be discussed below.

SECTION 1. GOALS AND OBJECTIVES

NWE objectives in operating the natural gas Default Supply procurement function are to: provide customers with reliable gas supply; provide customers reasonable and stable prices that reflect market conditions over time; and assure NWE cost recovery for all prudently-incurred natural gas supply related expenditures.

This Plan describes NWE's procurement strategy for the 2007 through 2009 tracking periods, which is designed to achieve its objectives. Specifically, NWE proposes to: enter into sufficient contracts for flowing gas to help assure reliability during the winter heating season (typically defined as November through March of the following year); place natural gas into storage during the injection season (typically defined as April through October); use its system storage rights to provide additional reliability during the winter heating season; use where appropriate, storage for ratepayer economic benefit; and, employ hedging mechanisms in the form of both forward market fixed-price purchases and the use of storage gas to dampen volatile gas markets.

SECTION 2. SEPARATION OF NATURAL GAS SUPPLY, TRANSMISSION, AND STORAGE

Code of Conduct and Functional Separation

Statute, tariff and rules all require separation between natural gas Default Supply and the natural gas Transmission and Storage functions. The following discussion provides an overview of the structure under which the Default Supply operates.

Sec. 69-3-1404 (1), MCA provides, in part, as follows:

> (1) A natural gas utility that provides customer choice and open access on its system shall:
>
> (a) functionally separate its natural gas production and gathering from its natural gas transmission, storage, and distribution services and remove natural gas production and gathering from the rate base;
>
> (b) adopt and comply with commission-approved standards of conduct to be included in a tariff to govern its natural gas transmission, storage, and distribution services…

Consistent with (b), MPC submitted, and the Commission approved, GTC-1 of the natural gas tariff that contains provisions implementing this section of law.

NWE Default Supply personnel receive no information advantage over employees of competing marketers. Therefore, the Default Supply function does not have access to daily information that other marketers do not have; does not have access to detailed storage information that other marketers do not have; and, in general, operates independently of the transmission and storage function.

Under statute, MPSC rules, and tariffs, the storage function is separated from the Default Supply function. Storage capacity is calculated and allocated by the Transmission group. The Default Supply unit communicates, at arms-length (according to Natural Gas tariff GTC-1, Section 21 discussed above), with the NorthWestern Gas Transmission division to ensure adequate supply and reliability.

SECTION 3. NWE NATURAL GAS SYSTEM

Pipeline Interconnections

A substantial volume of natural gas is produced in close proximity to the NWE Transmission pipeline system in Montana. In addition to this “on-system production,” NWE Transmission has connections to major third party pipelines, as listed in Table 1. (Please refer to the system map at Attachment 1.)

Table 1

NWE Pipeline Connections				
Pipeline	Connection Point	Capacity Dkt/d	Total Contracted Dkt/d	Default Supply Contracted Dkt/d
TCPL (NOVA)	Carway	75,000	60,000	45,000
EnCana	Aden Border	50,000	42,600	23,000
Havre Pipeline	Blaine Co. #3/#1	30,000	30,000	17,000
Colorado Interstate (CIG)	Grizzly	40,000*	5,000	0
Williston Basin	Warren	20,000*	0	0
* Interruptible capacity only.				

On-System Storage

NWE, as part of its portfolio approach to natural gas procurement, utilizes its natural gas storage to: reliably meet peak day requirements; mitigate market price fluctuations through seasonal price diversity; and provide economic benefit to ratepayers.

Natural gas storage is a physical tool that allows NWE to accumulate natural gas during periods (the injection season) when prices are often lower than the forward prices for the following heating season, and to withdraw the gas during the period when consumption and prices may be higher. NWE enters into base-load natural gas contracts for flowing gas with diverse parties at specified quantities for deliveries at points across its pipeline system. When not needed to serve load, this flowing gas is often stored for later use (generally during the upcoming heating season) to ensure reliability and provide price stability.

The provision of peak-day reliability on the NWE system depends in part on this on-system storage capacity. Operationally, NWE's Transmission system is divided into two primary load zones. Each of the main storage fields is essential in maintaining reliability for Default Supply ratepayers within the respective load zones.

The two primary natural gas storage fields are "Cobb" and "Dry Creek". However, Default Supply is allocated only a portion of the storage rights in each of these fields by the NWE Transmission group as discussed above. The Cobb storage field is on the north-end of the system, and is essential in serving peak day load requirements on the NWE system. The Cobb field is a depleted production reservoir storage field with total working gas capability of 10.25 Bcf, and maximum daily withdrawal capability of 150,000 Dkt/day. (Working gas is the term for gas that is injected, generally in the months from April through October, for withdrawal during the traditional heating season from November through March.) The Dry Creek storage field is on the south-end of the system. Like the Cobb field, Dry Creek is also essential to augment the flowing gas supply to meet peak day load requirements and to enhance pressure mainly on the South end of the NWE system. The Dry Creek field is a depleted production reservoir storage field with a total working gas capacity of 5.5 Bcf, and maximum daily withdrawal capability of 44,000 Dkt/day.

The Cobb field is supplied from the north-end of the system, from NWE's interconnection with TransCanada's NOVA pipeline at Carway and from North End Montana production. NOVA provides access to the very liquid natural gas trading hub, AECO, which is located in Alberta. The Dry Creek field can be supplied from either the north-end or the south-end of the NWE system.

NWE's third storage field is Box Elder. Box Elder is located in the Havre area and is primarily used to augment deliveries to the Havre area during cold weather events, and is a critical resource for load balancing in the Havre area. However, its total impact on NWE's remaining system is minimal.

The total peak deliverability of the three on-system storage fields is approximately 204,000 Dkt/day. However, Default Supply only holds contractual rights to approximately 121,800 Dkt/day of that total deliverability. The total deliverability of each field follows in Table 2:

Table 2

NWE System Storage Summary		
Storage Field	Deliverability dkt/d	Working Gas Capability Bcf
Cobb	150,000	10.25
Dry Creek	44,000	5.50
Box Elder	10,000	0.50
Total	204,000	16.25

While the working gas storage capability for the entire NWE system is 16.25 Bcf, the maximum working gas storage capacity allocated to Default Supply is approximately 9.0 Bcf. NWE's Gas Transmission division is responsible for operating and maintaining the storage fields in order to ensure reliability on the system. While the contractual working gas allocation for the Default Supply totals 9.0 Bcf of natural gas, the allocation of storage inventory between the Cobb and Dry Creek storage fields is determined by NWE's Gas Transmission division.

The Default Supply's storage capability only recently increased to the 9.0 Bcf level. NWE's Gas Transmission division modified the working gas capacity ratio on March 1, 2003. This adjustment increased the Default Supply working gas capacity from 5.7 Bcf to 9.0 Bcf – an increase of approximately 58 percent. This increase occurred because of increased compression on the transmissioin system and the achievement of other operational efficiencies by NWE's Gas

Transmission division. The added capacity was allocated among all firm storage contract holders. The maximum daily withdrawal amount was not affected by this increase in storage capacity, and remains at 121,800 Dkt for Default Supply.

It is important to recognize that physical limitations on the NWE system and finite compression capacity at the storage fields will, at times, limit the maximum amount of natural gas that can be injected into storage on a daily basis. NWE Default Supply, like other storage contract holders, must comply with the standards as set forth by the Transmission division. The Default Supply injection capability at Cobb ranges from 29,000 Dkt/day up to 72,000 Dkt/day, depending on the storage reservoir pressure and the level of injections by other parties who also hold storage rights. This range is accurate until the field reaches an inventory of 7.0 Bcf. After the 7.0 Bcf level is reached, increased pressures will hinder the injection capability. The Default Supply injection capability at Dry Creek is approximately 16,500 Dkt/day. Because of the limitations at Cobb, a Default Supply storage plan in excess of 7.0 Bcf for the heating season necessitates a more consistent or layered injection plan throughout the injection season.

<u>Deferred Storage</u>

An alternative to traditional storage arrangements is often referred to as "deferred" or "third party" storage." In a typical deferred storage arrangement, a third party natural gas supplier purchases natural gas during non-winter months and places it in one of NWE Transmission's natural gas storage fields. By contract with NWE Default Supply, the natural gas supplier holds title to the natural gas, which (despite the fact that NWE Default Supply is not the legal owner) is nonetheless contractually committed for Default Supply's use during a defined time period. When the natural gas is withdrawn for Default Supply's use during winter months, it is sold to Default Supply at the original cost at the time of injection plus an interest or carrying charge. Recent deferred storage arrangements have used an interest rate less than the 12.26% (the natural gas Default Supply's latest MPSC authorized pre-tax overall rate of return) which

Default Supply would earn if it held title to the gas, resulting in a lower total cost to ratepayers than if traditional utility-owned storage had been used.

Deferred storage transactions can take one of two forms: 1) The third party supplier can purchase the gas from another party and inject it into storage, or 2) the supplier can buy the gas from NWE through a storage transfer, paying cash to NWE and taking title to gas that is already in storage. In the first instance, NWE is legally guaranteed that the gas will be available when it is needed in the heating season, but NWE does not make a cash outlay. In the second instance, NWE is also guaranteed to have the gas available in the heating season, but is reimbursed cash for gas that it has already purchased. Cash is then expended more closely to the time when the gas is used during the winter months.

The result of either type of deferred storage arrangement is to improve NWE's cash flow by providing a better matching of revenues and costs. Note however that NWE will not enter into deferred storage arrangements unless the terms and conditions are such that ratepayers are at least financially indifferent from entering into such an agreement. These agreements do not increase or reduce the total amount of stored gas that NWE acquires on behalf of customers. These arrangements are simply financial in nature.

Deleted: also financially beneficial to ratepayers

NWE did not utilize deferred storage arrangements during the 2006 injection season. This was due to a lack of counterparty interest at terms NWE viewed as beneficial to ratepayers as compared to other contractual mechanisms.

SECTION 4. RESOURCE NEEDS ASSESSMENT

Existing Default Supply Requirements

NWE'S Default Supply is responsible for meeting all Default Supply load requirements. Default Supply provides natural gas to approximately 167,000 customers, with an estimated annual load requirement (including fuel) of approximately 20 Bcf per year. However, this load is highly seasonal in nature (i.e. consumption is heavily weighted to the heating months).

The Default Supply load is highly temperature-dependent and is predominantly a heating load, as evidenced by an annual load factor (average load/peak load) of less than 30%. This means that the greatest consumption (approximately 67% of the annual total, or 13.5 Bcf) occurs during the winter period (November – March) when market prices have historically been the highest.

While the annual or winter load shapes do not fluctuate widely from year to year, the temperature-driven daily load requirements vary substantially. The peak day consumption is estimated at 226,700 Dkt/day, while the minimum summer day load requirement is approximately 15,600 Dkt.

The weather-normalized load forecast does not indicate appreciable load growth for the Default Supply for the short term. However, while loads have been (and are expected to be) relatively flat, natural gas price volatility has increased.

Default Supply Load Sensitivity and Shape

A review of 15 previous years' loads with actual temperatures reveals annual load variations surrounding the 20 Bcf annual load estimate of between 18.2 Bcf/year (during a warm year) to 21.2 Bcf/year (during an extremely cold year). These variations of about 3 Bcf result in a total temperature-based load sensitivity of approximately 15 percent. Table 3 below shows the actual consumption for Default Supply for the past five years.

NWE's load forecasts utilize weather-normalized loads. Load forecasts are computed utilizing the heating degree days (HDD)[1] derived from 15 years of

[1] A heating degree day is a tool used to estimate the energy required for heating. One heating degree day occurs for each degree the daily mean temperature is below 65 degrees Fahrenheit. Thus, the larger the HDD number, the colder the temperature and the higher the heating load.

weather data. Projected loads are adjusted, as part of operational management, as weather conditions become increasingly certain.

Table 3

NorthWestern Energy Actual Total Supply Requirements (000's) Dekatherms of Natural Gas													
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**TOTAL**
2006	2,743	2,681	2,469	1,659	982	655	449	470	755	1,170	2,084	2,963	19,081
2005	3,195	2,439	2,044	1,585	1,092	714	485	474	724	1,140	2,082	3,355	19,328
2004	3,377	2,686	1,935	1,280	1,017	771	500	452	704	1,320	2,188	3,205	19,435
2003	2,913	2,802	2,318	1,550	1,043	619	433	422	639	1,341	2,421	3,229	19,732
2002	2,987	2,906	2,587	1,817	1,188	709	478	473	776	1,600	2,381	2,993	20,897
2001	3,106	2,926	2,146	1,655	1,103	652	446	404	518	1,487	2,026	3,050	19,519
Average	3,116	2,752	2,206	1,577	1,089	693	468	445	672	1,378	2,220	3,166	19,782

The 5-year (2001 – 2005) average for the annual load is 19.8 Bcf; the 5-year average for the heating season load is 13.5 Bcf. Note, in Table 3, the months November and December 2006 are estimates.

Current Supply Components

The single most important factor in maintaining system reliability is NWE's ability to obtain contracts for sufficient volumes of flowing gas for its peak day, winter heating season, and total annual demands. Historically, these contracts provide approximately 53,000 Dkt per day to NWE's system.

However, as discussed above, system requirements can range from a low of about 15,500 Dkt on a summer day to a peak of nearly 226,700 Dkt on a winter day. On any day when ratepayer demand is less than the contracted gas volumes, the difference between contracted flowing gas volumes and demand is ordinarily placed into storage (an injection). The price for injections is typically determined as either the market price at the first of the month when the injection took place, or as the average of the monthly price in the month that the injection occurred.

Default Supply procures and manages a natural gas portfolio of diverse flowing gas contracts from various sources to assist in meeting the peak day winter load requirement. In order to ensure the physical reliability of the system, the majority of its supply of flowing gas contracts must be firm in nature (i.e., interruptible contracts cannot be used for this purpose). Flowing gas supply is almost always priced by reference to market index, with only slight variations among the contracts. A summary of the existing contracts within the Default Supply portfolio is provided in Table 4.

Table 4

NWE Default Supply Portfolio Contract Summary				
Supplier	**Delivery Point**	**Dkt/day**	**Annual/Seasonal**	**Expires**
Supplier	Aden Border	9,750	Annual Base Load	11/1/2010
Supplier	Aden Border	11,250	Annual Base Load	11/1/2010
Supplier	Havre Area	4,000	Annual Base Load	7/1/2007
Supplier	Multiple (Havre Area)	13,000	Annual Base Load	4/1/2008
Suppliers	System North	10,000	Annual Base Load	Various
Suppliers	Carway, System, BC3	59,000	Dec. - Feb.	3/1/2007
	Total:	107,000		

NWE, as part of its risk management strategy, has developed multiple counterparties with whom it contracts for flowing gas. In addition to counterparty diversity, these contracts also have a range of termination dates. Per NWE's Risk Management Policy, potential counterparties are evaluated in terms of credit risk before contracts are executed, and appropriate credit terms are applied.

Default Supply Storage Utilization

In addition to Default Supply's flowing gas supply contracts, NWE's storage capacity is used to meet peak day requirements and provide economic benefits to customers. Storage utilization partially mitigates the impact of the low load factor of the Default Supply market by taking advantage of seasonal price variations. Default Supply utilizes its contractual and operational storage withdrawal rights of 121,800 Dkt, together with its flowing gas contracts, to serve the Default Supply peak day load of 226,700 Dkt.

The level of storage inventory at the end of any annual injection season is a function of both reliability and economics. For reliability planning, Default Supply personnel have determined that a minimum of approximately 6.0 Bcf (compared to 4.7 Bcf in the Abbreviated Plan) of working gas supply storage must be maintained at the beginning of each winter season.

However, the 6.0 Bcf base level of storage does more than provide reliability. It is also a very important price hedge that contributes to rate stability. Table 5 illustrates the calculation of the base reliability storage requirement:

Table 5

NWE Default Supply Base Storage Requirement		
5 Months of Winter (151 days)		
Winter Demand (Seasonal)	13.5	Bcf
Average Demand (Daily)	89,400	Dkt per day
Winter Flowing Gas (Daily)	50,000	Dkt per day
Average Storage Withdrawl (Daily)	39,400	Dkt per day
Total Minimum Storage	6.0	Bcf

The quantity of stored working gas procured in excess of this 6.0 Bcf base volume is a function of perceived economic value and system limitations.

Peak Day Supply Adequacy

The total winter daily delivery capacity from flowing and callable supply sources is 107,000 Dkt/day. Flowing gas and callable supply sources, combined with the Default Supply storage deliverability of 121,800 Dkt/day, enable NWE to meet the design peak day capacity of 226,700 Dkt. While the counterparties, prices, and terms of specific contracts vary from time to time, the primary receipt points and supply sources do not vary significantly due to the system design and resulting constraints.

SECTION 5. RESOURCE ACQUISITION

To serve ratepayers' natural gas needs, NWE both enters into agreements to buy natural gas and operates natural gas demand side management programs that moderate natural gas demand.

Natural Gas Demand Side Management (DSM) Program

Anticipating high natural gas commodity prices during the 2005-06 winter heating season, NWE avoided the delay associated with completing a comprehensive Natural Gas DSM Assessment and moved forward with the E+ Natural Gas DSM Program for residential customers. NWE performed a cost-effectiveness analysis of residential natural gas DSM measures and selected measures for inclusion in its 2005-06 program that passed the Total Resource Cost (TRC) test. NWE contracted with KEMA, Inc. (KEMA), a third party services provider used by NWE for electric default supply DSM programs, for services required to implement and operate the program in 2005-06.

NWE continued the program for the 2006-07 time period, with modifications based on experience gained during the first year. Because customer attendance at the February 2006 Community Weatherization Events was approximately one-third that at the October 2005 Events (likely because February had colder weather and more difficult winter traveling conditions for customers), NWE decided to conduct a single round of 20 community events in September/October 2006. Marketing and promotional activity in advance of the September/October Events was increased over the prior year effort. Following completion of the first cycle of weatherization events, NWE decided to conduct an additional 22 events during the November 13 - December 14, 2006 time period. Also, because the outlook for future natural gas prices and the associated gas avoided costs had changed since the previous study was performed for the 2005-06 program, NWE updated its cost-effectiveness analysis of program measures. Eligible DSM measures were essentially the same, but rebate levels changed as a result of the updated avoided costs. Rebates for qualified insulation measures were set at approximately one-third of total measure cost. Table 6 details the revised measures and rebates in effect for the period July 1, 2006 through June 30, 2007.

Table 6

NWE 2006-2007 Gas DSM Measures and Rebates			
Measures	Rebates		Qualifiers
	Preferred Contrator Installed ($/sq ft)	Self Installed ($/sq ft)	
Attic/ceiling Insulation R-0 to R-38	0.29	0.232	Existing base case R-0
Attic/ceiling Insulation R-0 to R-49	0.34	0.272	Existing base case R-0
Attic/ceiling Insulation R-11 to R-38	0.22	0.176	Existing base case R-11
Attic/ceiling Insulation R-11 to R-49	0.29	0.232	Existing base case R-11
Attic/ceiling Insulation R-19 to R-38	0.14	0.112	Existing base case R-19
Basement Wall Insulation R-0 to R-11	0.24	0.192	Includes rim joist insulation, existing R-0
Crawlspace Wall Insulation R-0 to R-11	0.30	0.240	For conditioned crawlspaces only, existing R-0
Exterior Above Grade Wall Insulation R-0 to R-11	0.34	0.272	Existing base case R-0
Programmable Energy Star Thermostat	$40/unit	$40/unit	Maximum of 2 units, incentive not to exceed cost
Low Flow Showerhead	Free	Free	Maximum of 2 per customer
Low Flow Faucet Aerator (Kitchen)	Free	Free	Maximum of 1 per customer
Low Flow Faucet Aerator (Bathroom)	Free	Free	Maximum of 2 per customer
Window Shrink Wrap Kit	Free	Free	Maximum 2 kits per customer
Weather Stripping Kit	Free	Free	Maximum 1 kits per customer

NWE renewed its contract with KEMA for services required to administer the natural gas DSM program during 2006-07. Elements of the 2006-07 program include:

1. Community Events (one cycle of 20 events in September/October 2006 and a second cycle of 22 events in November/December 2006) at which free home weatherization starter kits were provided to NWE residential natural gas customers.[2]

[2] Kits included door weather-stripping, door sweeps, window plastic, insulating foam, outlet/switch plate gaskets, low-flow showerhead and faucet aerators.

2. Mail-in rebates for programmable thermostats and increased insulation levels for attics, above-grade walls, basement walls and crawl space walls.[3]

3. Designation of preferred contractors (individuals or firms engaged in insulation installation that are licensed, bonded, and insured and enter written agreements with NWE to adhere to DSM program rules and guidelines).

2006-2007 Natural Gas DSM Program Budget and Savings

For the 2006-07 program year, the program budget and estimates of gas savings from installation of DSM measures are derived from projections of customer attendance at the Community Events and participation in the rebate program during the prior year. Annualized energy savings for the 2006-07 program are estimated at 114,526 Dkt/year.

Table 7 provides additional budget detail. (See Attachment 2 for detailed calculations of the cost-effectiveness of specific measures and rebate amounts related to those measures.)

Table 7

NWE 2006-2007 E+ Gas DSM Program Budget	
Item	**Budget**
Contractor labor	$204,706
Contractor expenses	$32,150
Rebates	$166,216
Materials (free weatherization kits)	$258,045
Marketing and promotion	$20,000
Total	**$681,117**

[3] Certain restrictions apply based on existing insulation levels. Details on qualifying beginning and ending insulation levels are available at http://www.northwesternenergy.com/showitem.aspx?M=1632&I=397.

Natural Gas DSM Assessment

NWE will perform a detailed Natural Gas DSM Assessment similar to the Electric DSM Assessment performed by KEMA and used to develop electric DSM potential and associated annual electric DSM targets for the electric default supply portfolio. Negotiations are in process with KEMA to finalize the scope of work, project deliverables and pricing. Assuming the parties reach agreement on terms, NWE expects the Natural Gas DSM Assessment work can begin in Q1 2007 and be completed by Q4 2007.

The Natural Gas DSM Assessment will proceed in phases:

1. Phase 1: Market Characterization

   The objective of this phase is to conduct a baseline evaluation of the number of natural gas customers, natural gas usage, building and equipment stock and develop a forecast of future growth on the NWE natural gas system in Montana. This work is needed to understand existing natural gas appliance saturation, equipment efficiency levels, total floor space, and building envelope condition in the NWE Montana area served by default supply natural gas. Substantial information for the residential sector is available from NWE's database of home energy audits conducted over the past decade. This audit database also contains some information on small commercial facilities. Existing data will be supplemented with the best information available from other relevant sources, as well as new field observations where required.

2. Phase 2: Measure Evaluation

   Analysis in this phase begins with development of a comprehensive list of possible natural gas DSM measures for each customer sector. Individual measures for each category of residential and non-residential buildings are then screened for cost-effectiveness using the TRC test.

   The next step in this phase is to conduct modeling that applies the natural gas savings estimates from individual measures passing the TRC test to the total population of facilities developed in Phase 1. The result of this modeling is an estimate of total technical potential for natural gas DSM. The final step is to adjust the total technical potential to total achievable potential, and then resolve this total achievable potential into average amounts of natural gas DSM that can potentially be acquired on an annual basis over an extended period of DSM program activity.

3. Phase 3: DSM Supply Curves

   The Phase 2 work produces information that allows NWE to develop annual natural gas DSM targets and budgets needed for final DSM program design and implementation. Because of the uncertainty associated with future gas prices and the attendant effect on natural gas avoided cost that underlies DSM program economics, the modeling work described in Phase 2 will be repeated using a range of natural gas avoided costs. This analysis will produce natural gas DSM supply curves that identify technical and achievable DSM potential in multiple future pricing environments.

<u>Longer Term Natural Gas DSM Plan</u>

In preparation for its 2007-08 natural gas DSM program, NWE will examine changes to the natural gas price outlook and the effect on avoided costs used to qualify measures currently included in its 2006-07 program and will, as before, make appropriate changes to rebate and incentive levels if necessary. NWE expects to again conduct Community Weatherization Events in Fall 2007 and continue the mail-in rebate offering. NWE plans to stay on this course until the Natural Gas DSM Assessment is complete.

Following completion of this DSM Assessment NWE will develop a longer term Natural Gas DSM Acquisition Plan and associated annual DSM budgets. The Plan will incorporate DSM into the default supply natural gas resource portfolio and will be designed to produce steady, sustained investment in cost-effective natural gas DSM well into the future.

Natural Gas Acquisition

NWE's Plan separates physical supply decisions from fixed price decisions. The majority of purchases that are made for physical supply are index purchases priced by reference to the AECO index.

NWE enters into indexed based agreements to insure that reliable gas supply is available during both the injection season and the heating season. During the injection season, the index priced gas will be used to serve load and fill storage (which provides reliability and a measure of price stability). During the heating season, the index priced gas will be used primarily to serve load and be available to help meet peak day requirements. Purchases of on-system gas supplies are usually index based, and the decision to fix the price is made independently. As stated above, the decision to buy this gas on-system provides reliability to the system (filling storage, serving load, and meeting the peak day requirement). This flowing gas can be purchased evenly throughout the year, or to some extent, can be weighted seasonally (example 50,000 Dkt per day during the injection season and 60,000 Dkt per day during the heating season).

Requests For Proposals

NWE was asked to provide further analysis concerning its use of RFPs to acquire natural gas supplies. NWE understands why RFPs are appealing to many, especially in those circumstances where limited price information or unique products are sought.

NWE, however, also accesses the real-time price of gas at AECO, a liquid market, through the use of various subscription services. Given this price transparency NWE believes it can get the best price and terms by negotiating one-on-one with an established counterparty with which NWE has developed a solid working relationship. RFPs allow the buyer to request price certainty for a standard product that all counterparties must bid on. If the price is known, flexibility in terms (i.e. delivery points, fixed quantity versus variable, peak versus base load, credit, etc.) is really where the value can be differentiated between contracts. Fundamentally, a RFP should provide the best possible price on a given day. The question that remains is "was it the best day to conduct the RFP?" Given the characteristics of natural gas commodity markets, namely very good price transparency coupled with high volatility, NWE believes it can best serve its customers by using its information and market intelligence to determine when to lock-in or fix prices. In doing so, NWE must be able to transact in a very short period of time, as prices can and do move very quickly. Hence, NWE believes one-on-one negotiation is superior to RFPs as the preferred methodology for locking in or fixing natural gas prices.

NWE has a close working relationship with a number of counterparties and the knowledge of exactly what each counterparty has to offer. NWE believes that the optimum deal will be gained by negotiating with the counterparties that best fit each purchasing situation. Thus, at the current time, fixed price RFPs will not be utilized since there is a liquid and transparent natural gas market at AECO.

SECTION 6. MODELING AND ANALYSIS

Regarding the use of modeling for portfolio planning and natural gas procurement, the Guidelines state:

> (1) "The utility's natural gas default supply portfolio planning and resource procurement and decision-making processes should incorporate cost-effective computer modeling and analyses.
>
> (2) The modeling employed by the utility should support an informed dialogue with its advisory committee, and contribute to prudent and informed judgments in the portfolio planning and resource acquisition process."

The natural gas Default Supply has many characteristics that reduce the amount and type of modeling that must be performed as NWE carries out the default supply function. Two key characteristics associated with serving Default Supply are: load growth stability and natural gas market liquidity. Given the stability of Default Supply's load growth, planning requirements are simplified. Also, natural gas markets are relatively liquid, and, even if there are unanticipated loads, additional supply is usually available so long as adequate transportation exists.

The Default Supply Market Operations function ("Operations") does employ some computer modeling (primarily using cost-effective spreadsheets), and the use of market forecasts, in its work. However, Operations primarily employs a combination of disciplined market purchases (consistent with this Plan) and opportunistic purchases informed by market intelligence and experience – both of which are informed by long-term forecasts that are discussed below.

<u>Natural Gas Price Market Trends</u>

Natural gas supply prices are determined by fundamentals (generally supply/demand relationships) and psychological influences in global markets. These influences include the perception of events that may occur, as well as actual events. Factors affecting the price of natural gas can include participation by financial entities in the markets, supply and demand trends (actual and perceived), gas-fired electric generation requirements, the impact (and potential impact) of hurricanes or other natural disasters on production, national storage inventory levels, crude oil prices, and numerous other factors. NWE is generally a price-taker (i.e., NWE Default Supply has little ability to influence prices or negotiate for a price that is significantly different from the market index price). Further, the price of supply to Montana is not determined by the relationships of Montana loads and the availability of supplies in Montana. In general, Montana supply costs are primarily a function of prices at the AECO hub, with relatively small discounts or premiums, which are determined through negotiations.

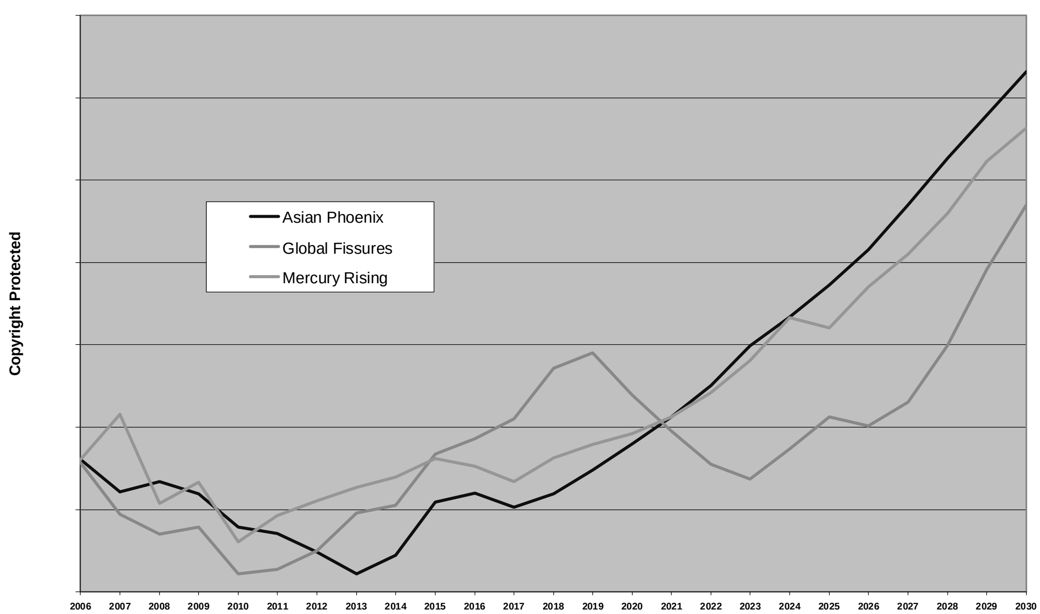
An in-depth gas price forecast is derived from a comprehensive analysis of numerous supply and demand elements at the regional, national, and world levels. A comprehensive long-term gas price model requires analysis of numerous elements of supply and demand. Purchasing a long-term price forecast allows NWE to obtain the results of such a model at substantially less than it would cost to develop internally.

At least two different types of uncertainty influence the accuracy of any forecast: uncertainty related to long-term changes in the industry, and uncertainty related to short-term gas price variability. Contributing to long-term uncertainty are long-term demand and supply issues, including, as just two examples, growth in gas demand for electricity generation and development of Liquid Natural Gas (LNG) supply. Short-term gas price variability also affects the variance of long-term forecasts of gas prices. Actual gas prices in future months will reflect variability due to short-term conditions. Examples of short-term supply and demand factors that can significantly affect prices include actual weather conditions in various markets, expected short-term weather conditions, and storage inventory balances. In other words, the actual price of natural gas in the future will be influenced by short-term market fundamentals. Forecasts cannot capture market realities of this type.

NWE subscribes to energy forecasting and research services provided by Cambridge Energy Research Associates, Inc. (CERA), a nationally recognized forecasting entity, at a fraction of what it would cost to develop internally. The CERA North American Gas & Power studies provide a plausible set of natural gas market price scenarios. NWE uses the CERA long-term fundamental gas price forecasts for informational purposes.   Figure 1 depicts a range of natural gas price forecasts recently prepared by CERA for the AECO trading point.

Figure 1

CERA Natural Gas Price Forecasts
AECO Basis, Nominal Dollars
(November 2006)



Although long-term natural gas forecasts have inherent limitations, the information provided by CERA's forecasts gives another point of reference to NWE in its resource acquisition decision-making process. Gas price assumptions are important for natural gas acquisition planning. However, both long- and short-term uncertainties make over-reliance on these tools problematic.

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NWE understands that its acquisition strategies must take uncertainty into account. (In fact, short-term uncertainties and price volatility are factors that argue strongly for a systematic purchasing approach such as NWE describes below in its hedging proposals.) Actual resource acquisition decisions, while gaining some perspectives from long-term forecasts, are based more on short-term fundamentals.

NWE also uses natural gas forward market prices to observe the prices at which market participants are willing to transact for delivery in future months. This provides information, but only at a particular point in time. Forward prices augment the information provided in the longer-term fundamental gas price forecasts.

SECTION 7. RISK MANAGEMENT AND MITIGATION

In the protected portion of Appendix 1, NWE has provided a detailed systematic plan to layer in fixed price hedges. In addition to the systematic layering, additional actions may be taken (if prices begin to trend up or down), that either reduce or increase price exposure, or the decisions to put hedges in place may be accelerated.

The goal of NWE's hedging strategy is to dampen natural gas volatility in an effective, systematic, and efficient manner. The strategy uses a combination of fixed price arrangements (both one year and beyond) and storage to provide reliability and remove a portion of the expected price volatility.

NWE will not try to outperform the market, but rather will be disciplined in layering in hedges over time, use storage, and make opportunistic purchases in the nearer-term. NWE will use its knowledge of the local natural gas market and its expertise in portfolio management to consistently maintain a natural gas portfolio that provides reliability and price stability. Also, if price levels reach defined hard trigger levels, additional purchases will be made.

While these strategies seek to mitigate supply price volatility and provide supply cost stability and affordability, they cannot shield customers from natural gas market price trends. NWE will work diligently to dampen price volatility and currently proposes to have, at a minimum, 65 – 75 percent of the upcoming winter heating season hedged.

Storage

The storage capacity available to NWE Default Supply is a key asset. When gas is placed in storage, the index priced gas becomes a known price, and, therefore, becomes a fixed price hedge. Storage hedging is a methodical approach that does not attempt to "out-guess" the market. Purchases at fixed prices will be made by Default Supply on a determined pattern, i.e., monthly during the injection season.

Storage has proven to be an effective and flexible tool to mitigate short-term price impacts. Seasonal price variation, NWE's substantial working gas storage rights, and its withdrawal flexibility facilitates price mitigation within each annual period. However, while storage can mitigate price volatility, it cannot shield customers from year-over-year price trends.

In addition to the value that storage provides in terms of reliability and price certainty, NWE will also work to obtain value from storage through the monetization of any available NWE Default Supply storage. NWE's purpose will be to monetize, on behalf of customers, the inherent value that storage possesses because of seasonal price differences and the volatility surrounding those price differences.

Layering in Fixed Price Purchases

Fixing the forward price of flowing gas for both the injection and heating seasons reduces price volatility. As the MPSC and Montana Consumer Counsel (MCC) are aware, there is the inherent chance that the action of removing price risk will result in purchases being made at prices above the bottom of the market. However, it is NWE's understanding, per the Guidelines and in the MPSC comments to the Abbreviated Plan, that price stability is an important policy goal for customers.

Default Supply will execute forward contracts in addition to storage activities. Beyond the level of storage needed to ensure reliability, storage and forward contracts serve essentially the same function (price hedges), but do so using fundamentally different strategies. Decisions regarding forward contracts will be periodically reviewed, as market conditions evolve, up until the contractual date for physical delivery. Additional fixed price contracts could be implemented to take advantage of particular market weaknesses, which present opportunities from a buyer's perspective. Unlike storage refill, which is subject to physical constraints, forward contracts are considerably more flexible.

Hard Targets

In addition to the storage and fixed price hedging strategies discussed above, an overlying "hard target" mechanism will be utilized that will trigger additional fixed price purchases for forward delivery. These targets will be set at levels deemed to be "favorable" prices to the customer. This reflects the fact that at some "low" price there may be no desire to have exposure to floating prices. In other words, knowledgeable Default Supply customers and regulators would likely be relatively pleased to have some, or all, of the portfolio procured at this "hard target" price. (NWE also believes that a reduced portion of the portfolio should be exposed to market prices if prices move significantly upward, but those upper-end price targets remain under review.) NWE proposes that hard targets be reviewed and updated to reflect changes in the market. At some defined "low" price, the benefit of a hard target may be more valuable than having a systematic, layered approach to fixing prices.

Physical Acquisition

The primary vehicle for longer term hedging will be either physical or financial swaps (agreements that allow for settlement reflecting the difference between an agreed upon fixed price and an agreed upon index). These transactions are merely the vehicle by which index-priced gas is converted to fixed prices, and in almost all instances they have no effect on the physical molecules used to serve load. However, if opportunities should arise to purchase an equity interest in developed natural gas fields that are deliverable to NWE at the defined hard targets, these purchases may be explored. This approach could require reconsideration of the existing law that requires the functional separation of production from the transmission and storage functions. Sec. 69-3-1404, MCA.

Liquidity

Liquidity is a serious issue that must be taken into account by NWE and policy makers. NWE is raising the liquidity issue in this Plan to begin the discussion on how best to address our concerns. However, NWE is not seeking to use this Plan as the forum for resolving the issues surrounding liquidity. Rather, NWE is using this opportunity to outline the issue and to note that liquidity concerns are significant and need to be addressed.

A liquid asset is commonly thought of as “cash or an asset easily converted into cash.” Ensuring the availability of sufficient liquidity is necessary to guarantee that a company can meet its short-term liabilities. NWE, like all businesses, has a finite amount of liquidity available to meet all of its business functions. Thus, there are ongoing competing business demands between all of the various business functions for the available liquidity. For example, the functions of electricity and natural gas Default Supply both require the use of large amounts of liquidity as does maintenance and refurbishment and organic growth of the transmission and distribution systems.

NWE is continuously working to assure it has sufficient liquidity to operate all its business functions, including Default Supply. Since Default Supply has no assets and receives no profit on its default supply activities, it has no ability to generate or gain access to liquid assets (such as short term lines of credit) and thus it must “borrow” or lean on other areas of the company for its liquidity. In doing so, it is in a sense taking the liquidity of the other areas (regulated transmission and distribution) to operate Default Supply functions.

Implementation of natural gas hedging actions can impact the liquidity of NWE and the effects (depending on the type and term of hedging actions, and the volume of the hedges) may become significant to NWE’s operations. For example, for every 1.0 Bcf of gas secured at a fixed price, a one-dollar move in the market would cause the mark-to-market to change by $1 million. In addition to mark-to-market concerns, substantial upfront cash outlays are required to fill storage. For instance, if gas prices are $6.50 per Dkt, a $6.5 million outlay is required for each 1.0 Bcf of gas placed in storage. Each of these scenarios would require substantial amounts of liquidity, liquidity demands that must compete with other business areas of NWE.

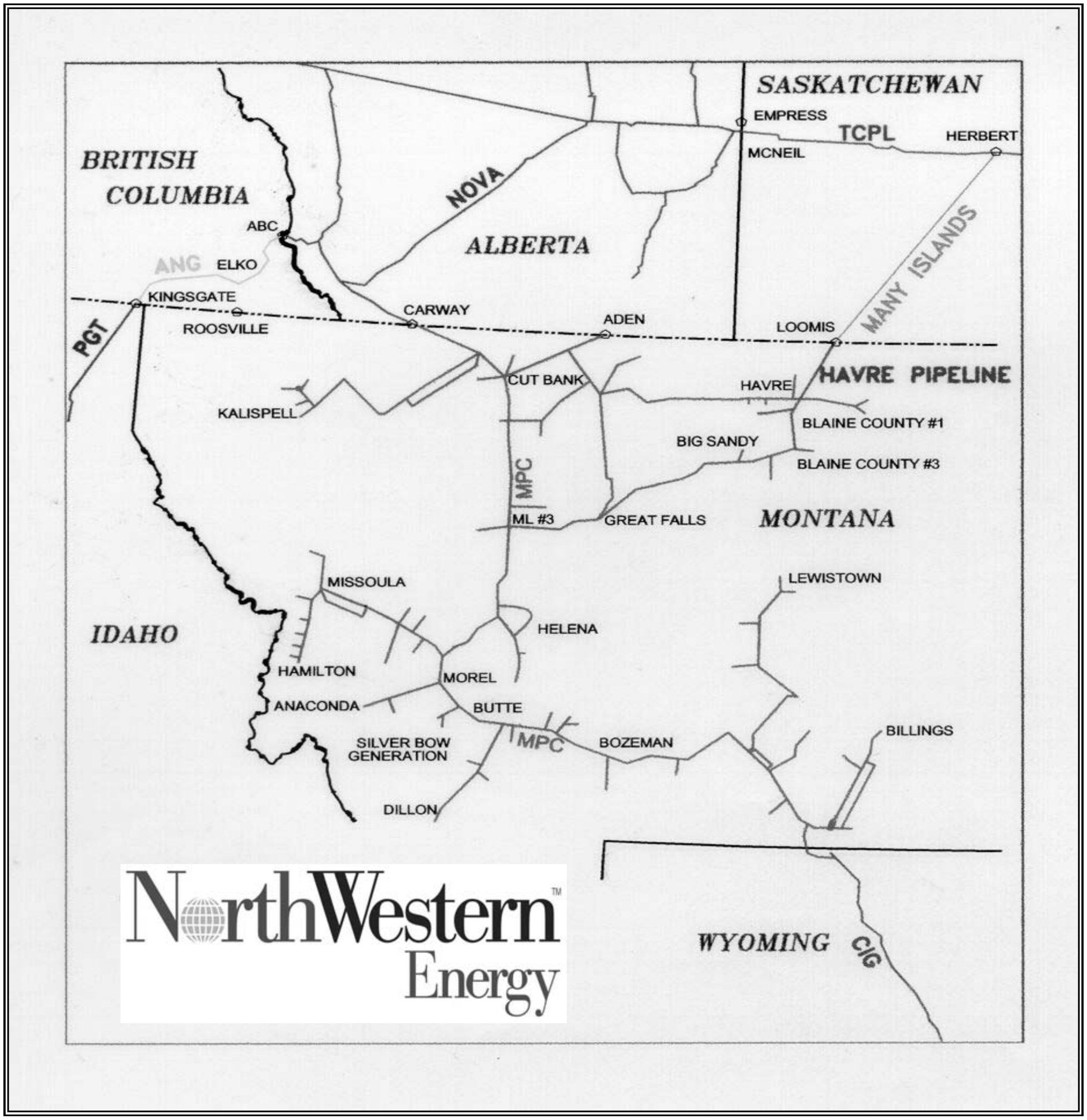
In part because of liquidity concerns, deferred storage is a tool that NWE will maintain in its “tool box” into the future and may, to the extent there are counterparties willing to enter into such arrangements at terms that are acceptable to NWE, pursue such arrangements.

SECTION 8. TRANSPARENCY AND DOCUMENTATION

NWE believes this Natural Gas Procurement Plan provides a clear and transparent understanding of the approach Default Supply will take in serving ratepayer needs. Default Supply Operations will follow this Plan (unless NWE, using its judgment, believes modifications are necessary). The procurement environment is highly complex, developments can be swift and often require experience to properly interpret, and transactions are numerous. That said, any deviations from this Plan will be clearly documented by Operations and discussed with interested parties. The importance of documentation in the regulatory process is clear.

NWE has attempted to provide a clear and defined acquisition strategy in this Plan and awaits feedback from the MPSC concerning its strategies. Discussions with the MPSC and MCC about the Plan, strategies and actions have been initiated since May 2006. NWE believes this method of communication should continue and will schedule discussions throughout this period.

Attachment 1. Natural Gas System Map



Attachment 2. DSM Calculations

Calculations & Assumptions

3/1/2006

Assume:

The average residential natural gas heated with gas domestic hot water (DHW) use is		120	dKt/yr	
The average residential natural gas domestic hot water (DHW) use	1.67 dKt/mth or	20	dKt/yr	17%
The average residential natural gas heating use is		100	dKt/yr	83%
		$ 11.07	per dKt gas cost (March 1, 2006)	

Note: The new gas avoided costs are used in this updated analysis of the gas DSM program.
Some rebates have been lowered compared to the 2005/2006 program and one measure did not pass the TRC test due to lower avoided costs (attic insulation R-19 to R-49). Rebates were lowered to approximate 33% of project cost or 2.0 year SPB.
The higher rebates for the 2005/2006 program year generated significant customer participation, but were generally in the 60% to 70% of the project cost range. Lowering the rebates for the 2006/2007 program year to approximately 33% of the project cost will hopefully maintain a high level of customer and contractor participation, preserve the program's cost-effectiveness with lower gas avoided costs, and still provide an attractive enough incentive to motivate customers to act.

Attic/ceiling insulation

Per the 2003 Resource Assessment the mean R-Value for 90% of the residential ceiling insulation is 27.3, Section 2 pp 2-10

Increasing ceiling insulation from R-0 to R-38 will save	51.4%	of space heat energy use & cost	$ 0.89	per sqft
Increasing ceiling insulation from R-0 to R-49 will save	52.5%	of space heat energy use & cost	$ 1.03	per sqft
Increasing ceiling insulation from R-11 to R-38 will save	16.5%	of space heat energy use & cost	$ 0.66	per sqft
Increasing ceiling insulation from R-11 to R-49 will save	18.4%	of space heat energy use & cost	$ 0.89	per sqft
Increasing ceiling insulation from R-19 to R-38 will save	9.4%	of space heat energy use & cost	$ 0.43	per sqft
Increasing ceiling insulation from R-19 to R-49 will save	11.5%	of space heat energy use & cost	$ 0.66	per sqft

Average cost = $0.02282/R-sqft

Assume R-0 as base case, increase insulation to R-38

Savings	51.40%	of space heat energy use & cost		$ 0.89	per sqft
Savings	51.40	dKt/yr		$ 1,380	for 1551 sqft home
Savings per sqft	0.03314	dKt/sqft		2.4	SPB with no rebate
NPV of gas saved =	$ 3,359	over 30 years		1.6	SPB with rebate
Rebate at 50% npv =	$ 1,679			2.4	TRC test
Rebate per sqft =	$ 0.29	per sqft	approx	33%	of project cost

Assume R-0 as base case, increase insulation to R-49

Savings	52.50%	of space heat energy use & cost		$ 1.03	per sqft
Savings	52.50	dKt/yr		$ 1,598	for 1551 sqft home
Savings per sqft	0.03385	dKt/sqft		2.75	SPB with no rebate
NPV of gas saved =	$ 3,430	over 30 years		1.8	SPB with rebate
Rebate at 50% npv =	$ 1,715			2.1	TRC test
Rebate per sqft =	$ 0.34	per sqft	approx	33%	of project cost

Assume R-11 as base case, increase insulation to R-38

Savings	16.50%	of space heat energy use & cost		$ 0.66	per sqft
Savings	16.50	dKt/yr		$ 1,024	for 1551 sqft home
Savings per sqft	0.01064	dKt/sqft		5.60	SPB with no rebate
NPV of gas saved =	$ 1,078	over 30 years		3.7	SPB with rebate
Rebate at 50% npv =	$ 539			1.1	TRC test
Rebate per sqft =	$ 0.22	per sqft	approx	33%	of project cost

Assume R-11 as base case, increase insulation to R-49

Savings	18.40%	of space heat energy use & cost		$ 0.89	per sqft
Savings	18.40	dKt/yr		$ 1,380	for 1551 sqft home
Savings per sqft	0.01186	dKt/sqft		6.78	SPB with no rebate
NPV of gas saved =	$ 1,202	over 30 years		4.6	SPB with rebate
Rebate at 50% npv =	$ 601			0.9	TRC test
Rebate per sqft =	$ 0.29	per sqft	approx	33%	of project cost

Assume R-19 as base case, increase insulation to R-38

Savings	9.40%	of space heat energy use & cost		$ 0.43	per sqft
Savings	9.40	dKt/yr		$ 667	for 1551 sqft home
Savings per sqft	0.00606	dKt/sqft		6.41	SPB with no rebate
NPV of gas saved =	$ 614	over 30 years		4.3	SPB with rebate
Rebate at 50% npv =	$ 307			0.9	TRC test
Rebate per sqft =	$ 0.14	per sqft	approx	33%	of project cost

Assume R-19 as base case, increase insulation to R-49					
Savings	11.50%	of space heat energy use & cost		$ 0.66	per sqft
Savings	11.50	dKt/yr		$ 1,023.66	for 1551 sqft home
Savings per sqft	0.00741	dKt/sqft		8.04	SPB with no rebate
NPV of gas saved =	$ 751	over 30 years		8.0	SPB with rebate
Rebate at 50% npv =	$ 376			0.7	TRC test
Rebate per sqft =	$ -	per sqft	approx	0%	of project cost

Foundation/Basement Wall Insulation

Increase Foundation/Basement wall from R-0 to R-11					
Savings	18.20%	of space heat energy use & cost		$ 0.73	per sqft
Savings	18.20	dKt/yr		$ 1,051	for 1440 sqft of wall
Savings per sqft	0.01264	dKt/sqft		5.22	SPB with no rebate
NPV of gas saved =	$ 1,189	over 30 years		3.5	SPB with rebate
Rebate at 50% npv =	$ 595			1.1	TRC test
Rebate per sqft =	$ 0.24	per sqft	approx	33%	of project cost

Crawlspace Wall Insulation (For conditioned crawlspaces only)

Increase Crawlspace Wall from R-0 to R-19 - R-20 recommended					
Savings	5.80%	of space heat energy use & cost		$ 0.91	per sqft
Savings	5.80	dKt/yr		$ 436	for 480 sqft of crawlspace walls
Savings per sqft	0.01208	dKt/sqft		6.79	SPB with no rebate
NPV of gas saved =	$ 379	over 30 years		4.5	SPB with rebate
Rebate at 50% npv =	$ 189			0.9	TRC test
Rebate per sqft =	$ 0.30	per sqft	approx	33%	of project cost

Exterior Above Grade Wall Insulation

Increase exterior above grade wall from R-0 to R-11	31.2%	space heat energy use & cost		$ 1.03	per sqft
Savings	31.20	dKt/yr		$ 1,483	for 1440 sqft of wall
Savings per sqft	0.02167	dKt/sqft		4.29	SPB with no rebate
NPV of gas saved =	$ 2,039	over 30 years		2.9	SPB with rebate
Rebate at 50% npv =	$ 1,019			1.4	TRC test
Rebate per sqft =	$ 0.34	per sqft	approx	33%	of project cost

Exterior Above Grade Wall Insulation

Increase exterior above grade wall from R-11 to R-21	14.2%	space heat energy use & cost		$ 1.03	per sqft
Savings	14.22	dKt/yr		$ 1,483	for 1440 sqft of wall
Savings per sqft	0.00988	dKt/sqft		9.42	SPB with no rebate
NPV of gas saved =	$ 929	over 30 years		9.4	SPB with rebate
Rebate at 50% npv =	$ 465			0.6	TRC test
Rebate per sqft =	$ -	per sqft	approx	0%	of project cost

Floor Insulation - over non-conditioned space

Increase Floor insulation from R-0 to R-19	5.8%	savings of space heat energy use and cost	$ 1.01	per sqft
Increase Floor insulation from R-0 to R-30	9.1%	savings of space heat energy use and cost	$ 1.48	per sqft

Assume R-0 basecase, increase floor insul. to R-19	5.80%	of space heat energy use & cost		$ 1.01	per sqft
Savings	5.80	dKt/yr		$ 1,907	for 1888 sqft of floor
Savings per sqft	0.00307	dKt/sqft		29.70	SPB with no rebate
NPV of gas saved =	$ 379	over 30 years		29.7	SPB with rebate
Rebate at 50% npv =	$ 189			0.2	TRC test
Rebate per sqft =	$ -	per sqft	approx	0%	of project cost

Assume R-0 basecase, increase floor insul. to R-30	9.10%	of space heat energy use & cost		$ 1.48	per sqft
Savings	9.10	dKt/yr		$ 2,794	for 1888 sqft of floor
Savings per sqft	0.00482	dKt/sqft		27.74	SPB with no rebate
NPV of gas saved =	$ 595	over 30 years		27.7	SPB with rebate
Rebate at 50% npv =	$ 297			0.2	TRC test
Rebate per sqft =	$ -	per sqft	approx	0%	of project cost

High Efficiency Windows

Replace existing windows with U-0.35 low-e windows	5.3%	savings of space heat energy use and cost	$ 49.00	per sqft
Replace existing windows with U-0.32 low-e windows	13.3%	savings of space heat energy use and cost	$ 51.00	per sqft

Replace existing windows with U-0.35 low-e windows

Savings		5.30%	of space heat energy use & cost		$ 49.00	per sqft
Savings		5.30	dKt/yr		$ 7,644	for 156 sqft of window
Savings per sqft		0.03397	dKt/sqft		130.29	SPB with no rebate
NPV of gas saved =	$	346	over 30 years		130.3	SPB with rebate
Rebate at 50% npv =	$	173			0.05	TRC test
Rebate per sqft =	$	-	per sqft	approx	0%	of project cost

Replace existing windows with U-0.32 low-e windows

Savings		13.30%	space heat energy use & cost		$ 51.00	per sqft
Savings		13.30	dKt/yr		$ 7,956	for 156 sqft of window
Savings per sqft		0.08526	dKt/sqft		54.04	SPB with no rebate
NPV of gas saved =	$	869	over 30 years		54.0	SPB with rebate
Rebate at 50% npv =	$	435			0.11	TRC test
Rebate per sqft =	$	-	per sqft	approx	0%	of project cost

Storm Windows

Install single pane storm windows	Savings		2.0%	space heat energy use & cost		$ 23.86	per sqft
	Savings		2.00	dKt/yr		$ 3,722	for 156 sqft of wall
	Savings per sqft		0.01282	dKt/sqft		168.13	SPB with no rebate
	NPV of gas saved =	$	131	over 30 years		168.1	SPB with rebate
	Rebate at 50% npv =	$	65			0.04	TRC test
	Rebate per sqft =	$	-	per sqft	approx	0%	of project cost

Efficient Furnace/Boiler Assume existing furnace/boiler 68% AFUE

Replace existing furnace/boiler with a new 80% AFUE

Savings		17.65%	space heat energy use & cost		$ 2,000	per unit
Savings		17.65	dKt/yr per unit		10.24	SPB with no rebate
NPV of gas saved =	$	801	over 15 years		10.2	SPB with rebate
Rebate at 50% npv =	$	-	approx	0% of cost	0.4	TRC test

Efficient Furnace/Boiler Assume existing furnace/boiler 68% AFUE

Replace existing furnace/boiler with a new 90% AFUE

Savings		32.35%	space heat energy use & cost		$ 2,500	per unit
Savings		32.35	dKt/yr per unit		6.98	SPB with no rebate
NPV of gas saved =	$	1,468	over 15 years		7.0	SPB with rebate
Rebate at 50% npv =	$	-	approx	0% of cost	0.6	TRC test

Direct Vent Room Heater Assume existing room heater 65% AFUE

Assume existing room heater provides space heat for 25% of a 1550 sqft home or 388 sqft

Replace existing room heater with a new 80% AFUE

Savings		22%	space heat energy use & cost		$ 750	per unit
Savings		5.51	dKt/yr per unit		12.29	SPB with no rebate
NPV of gas saved =	$	250	over 15 years		12.3	SPB with rebate
Rebate at 50% npv =	$	-	approx	0% of cost	0.3	TRC test

Programmable Energy Star Thermostat (unit cost = $58.00, installed cost = $93.50/unit)

Resource Assessment:	Savings		5.9%	space heat energy use & cost		$ 93.50	per unit
	Savings		5.90	dKt/yr	(1551 sqft home)	1.4	SPB with no rebate
	Savings per sqft		0.00380	dKt/sqft		0.8	
	NPV of gas saved =	$	319	over 20 years		3.4	TRC test
	Rebate at 50% npv =	$	159				
	Rebate =	$	40.00	per unit	approx	43%	of project cost

Low Flow Showerhead (2.5 gpm or less)

Cost =	$	2.99	per unit
Savings		363	kWh/yr-unit from 2003 Resource Assessment
Savings		1.24	dKt/yr - unit
NPV of gas saved =	$	56	over 15 years
Rebate at 50% npv =	$	28	
Rebate =	$	5.98	proposed to issue maximum 2 per customer

Low Flow Faucet Aerator

2.2 gpm or less for kitchen & 1.5 gpm or less for bathroom

Cost =	$	1.87	per unit
Savings		73	kWh/yr-unit from 2003 Resource Assessment
Savings		0.25	dKt/yr - unit
NPV of gas saved =	$	11	over 15 years
Rebate at 50% npv =	$	5.67	
Rebate =	$	1.87	proposed to issue one $1.09 kitchen and two $0.39 bath aerators

Window Shrink Wrap Kit

Assumes infiltration reduction from 0.6 air changes per hour to 0.55 air changes per hour

Resource Assessment:	Savings		3.58%	space heat energy use & cost	$	1.33	per window
	Savings		3.58	dKt/yr (1888 sqft home)	$	7.98	for 6 windows
	Savings per sqft		0.00189	dKt/sqft			
	NPV of gas saved =	$	27.55	over 1 years			
	Rebate at 50% npv =	$	13.78				
	Rebate =	$	7.98	proposed to issue maximum of two kits per customer			

Assume shrink wrap kit costs $3.99 for 3 windows

Offering 2 kits per customer = $7.98 for approximately 6 windows

Weather Stripping and Sealing

Assumes infiltration reduction from 0.6 air changes per hour to 0.55 air changes per hour

Resource Assessment:	Savings		3.58%	space heat energy use for 1888 sqft home
	Savings		3.58	dKt/yr (1888 sqft home)
	Savings per sqft		0.00189	dKt/sqft
	NPV of gas saved =	$	126.25	over 10 years
	Rebate at 50% npv =	$	63.13	
	Rebate =	$	23.89	proposed to issue 1 kit per customer

Assume a weather stripping kit costs $28.29

Kit consists of:

Weather stripping for 2 doors	$	14.98
Door sweeps for 2 doors	$	3.10
One can of foam	$	3.89
1 pkg outlet plate covers (10)	$	0.96
1 pkg switch plate covers (10)	$	0.96
	$	-
Total	$	23.89

Appendix 1 NWE Hedging Strategy

This Appendix 1 provides detail regarding NWE's storage plan, as well as forecast purchase volumes by month. Therefore, some of the information in this Appendix 1 will be provided under the protective order issued in this docket.

NWE Hedging Plan - January 2007 Forward

The information provided below is for planning purposes and is based on current market conditions. Accordingly, it is subject to change.

The goal of NWE's hedging strategy is to dampen natural gas price volatility in an effective, systematic, and efficient manner. NWE currently purchases 100% of its physical gas supply based on an index (market) price. The hedging strategy NWE proposes for this plan involves four main areas:

1) Utilizing storage to provide reliability and remove a portion of the expected price volatility;
2) When applicable, using storage to capture the difference between winter and summer priced gas and flowing that value back as a reduction to rates. This is referred to as "asset monetization";
3) Entering into transactions that convert index priced purchases to fixed or known values; and
4) Setting "hard target" price values that supplement other hedging techniques and allow for increased purchases of fixed price gas.

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Storage

Storage has proven to be an effective and flexible tool to mitigate short-term price impacts. When gas is placed in storage, the index priced gas becomes a known price, and, therefore, becomes a fixed price hedge. NWE has developed the following storage plan for future injection and withdrawal periods.

Default Supply is proposing to use roughly ___ Bcf of the 9 Bcf of storage gas capacity that is available for use by NWE Default Supply (see Table A1). Of this ___ Bcf, NWE is proposing to use ___ Bcf for asset monetization, the value of which will flow to ratepayers. The remainder, or ___ Bcf, is the amount of storage that Default Supply will have available for use during heating seasons (see Table A2). Default Supply can inject ___ Bcf of additional storage to reach the total of 9.0 Bcf, and may do so, depending on changing supply and market conditions.

Asset Monetization

Asset monetization is simply capturing, when available, the price spread between when gas is injected in storage and the price when it is withdrawn and sold. For example: If gas can be purchased for injection in May – July at an average price of $5.00/Dkt and can simultaneously be sold for withdrawal in the following Jan – Mar for $7.00/Dkt, there is a $2.00 spread. The carrying cost at these prices would be approximately $0.36/Dkt. The incremental transportation cost to deliver this gas to a liquid market (AECO) would be $____/Dkt. So, whenever the average injection month's price is greater than the average withdrawal month's price by more than $____/Dkt, it makes sense to optimize or fill storage and flow the residual revenue back to customers through reductions to gas cost. Obviously, NWE will attempt to time these transactions to maximize customer benefit. If the spread is not large enough to recover the cost, asset monetization will not occur, and the total storage inventory target will be reduced by the proposed asset monetization volume of ___ Bcf.

Table A1. Physical Gas Storage Injection Plan (April - October xxxx)

Est. beginning balance (March 31, xxxx)	___ Bcf
Injection during March-Oct. (flowing gas less load)	___Bcf
Total	___Bcf

Table A2. Proposed Gas Storage Usage

Estimated gas withdrawn for winter needs	___ Bcf
Gas available for asset monetization	___ Bcf
Total	___ Bcf

Table A3 below provides an illustration of how storage should refill during the injection season and how it could be used during the withdrawal season. These numbers are only illustrative and are subject to numerous conditions. Weather (heating degree days), for example, is one of the most significant variables that will affect the injections and withdrawals of natural gas in NWE's storage. The ___ Bcf of asset monetization will only be utilized when the price spread between the injection price and the withdrawal price allow for additional credits to gas cost after the recovery of all carrying and transport costs.

Table A3. Systematic Gas Storage Usage

Systematic use of gas storage (volumes in 000's cubic feet)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total	Nov-Mar
Apr	______	-	-	-	-	-	-	-	-	(620)	(560)	(620)	______	______
May	-	______	-	-	-	-	-	-	-	-	-	-	______	______
Jun	-	-	______	-	-	-	-	-	-	-	-	-	______	______
Jul	-	-	-	______	-	-	-	-	-	-	-	-	______	______
Aug	-	-	-	-	______	-	-	-	-	-	-	-	______	______
Sep	-	-	-	-	-	______	-	-	-	-	-	-	______	______
Oct	-	-	-	-	-	-	______	-	-	-	-	-	______	______
Nov	-	-	-	-	-	-	-	______	-	-	-	-	______	______
Dec	-	-	-	-	-	-	-	-	______	-	-	-	______	______
Jan	-	-	-	-	-	-	-	-	-	______	-	-	______	______
Feb	-	-	-	-	-	-	-	-	-	-	______		______	______
Mar	-	-	-	-	-	-	-	-	-	-	-	______	______	______
Starting Bal -> ______	______	______	______	______	______	______	______	______	______	______	______	______	______	______
Cumulative Month End Bal ->	______	______	______	______	______	______	______	______	______	______	______	______	Winter Hedge	______

The amount of available winter storage hedge (___ Bcf) is a function of storage available in October (___ Bcf) less the __ Bcf NWE has proposed to make available for asset monetization.

Layering in Fixed Price Purchases

Fixing the forward price of flowing gas for both the injection and heating seasons also reduces price volatility. Default Supply will execute fixed price forward contracts in addition to storage activities. Decisions regarding the execution of fixed price forward contracts will be periodically reviewed, as market conditions evolve, up until the contractual date for physical delivery. In addition to the planned purchases, additional actions may be taken if prices begin to trend up or down to remove additional portions of price exposure, or the decision to put hedges in place may be accelerated.

NWE is proposing the following fixed price forward purchases for the future “injection” and “withdrawal” periods (applicable to a portion of storage injections and directly delivered gas).

a. Purchase fixed price contracts on daily volumes (example 5,000 Dkt/day) during April-September. for deliveries during April-October for a total of ___ Bcf. These transactions serve to fix or “lock-in” the price of gas purchased during the injection season, which is April – October.
b. Purchase fixed price contracts on daily volumes (example 5,000 Dkt/day) during April-September. for deliveries during November-March for a total of ___ Bcf. These transactions serve to fix or “lock-in” the price of gas purchased during the winter heating season, which is November – March.

As noted above, the timing of these fixed price transactions may change in response to market conditions. Variations from the plan will be documented and explained.

The resulting winter season hedge is ___ Bcf out of a total ____ Bcf heating season load (__% of heating season load). The ___ Bcf is a result of the ___ Bcf in storage plus the ___ Bcf of fixed price contracts from (b) above.

<u>Hard Targets</u>

In addition to the storage and fixed price hedging strategies discussed above, an overlying "hard target" mechanism will be utilized that will trigger additional fixed price purchases for forward delivery. These targets will be set at levels deemed to be "favorable" prices to the customer. This reflects the fact that at some "low" price there may be no desire to have exposure to floating prices. In other words, knowledgeable Default Supply customers and regulators would likely be relatively pleased to have more of the portfolio procured at this "hard target' price. (See Table A4.) NWE proposes that hard targets be reviewed and updated on a defined schedule to reflect changes in the market. At some defined "low" price, the benefit of hard target purchases may exceed the value of a systematic, layered approach to fixing prices.

Table A4. Long-term Hard Targets

Longer term **Hard Targets (Nov 07 / Oct 10)**	**% of Supply**
$____	__%
$____	__%
$____	__%
$____	___%

Long-term Hedging

The primary vehicle for longer term hedging will be fixed price swaps (agreements that allow for settlement between an agreed upon fixed price and an agreed upon index). NWE proposes (see Table A5) the following long-term or multi-year hedging strategy:

a. Purchase _ Bcf of “layered” fixed forward contracts during the injection season (April – October) of 2007, 2008 and 2009, for delivery in each November through October of the years 2007/2008, 2008/2009 and 2009/2010;
b. Result is _ Bcf of fixed price contracts for 2007/2008; _ Bcf for 2008/2009; and _ Bcf for 2009/2010;
c. Continue similar purchases annually thereafter so minimum of _ Bcf is available at fixed prices in each year; and
d. Once the long-term fixed price hedges are fully implemented to the _ Bcf level, the seasonal, short-term hedging activity will be reviewed to ensure that the total volume of gas being hedged is appropriate. Currently, the total target is __% - __% of the winter supplies.

Table A5. Multi-Year Hedging Strategy

Purchasing	**Year**	**2007/08**	**2008/09**	**2009/10**	**2010/11**
Apr - Oct	2007	__	__	__	
Apr-Oct	2008		__	__	__
Apr-Oct	2009			__	__
					__
Total Volume (Bcf)		__	__	__	__